

Review of spiders of genus *Eresus* in Egypt (*Araneida : Eresidae*)

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Abstract

The type material specimens of Egyptian *Eresus* species were examined, redescribed, and photographs and drawings of genitalia were prepared. All Egyptian *Eresus* species were reviewed. *Eresus pharaonis* Walckenaer, 1837 and *Eresus semicanus* Simon, 1908 are redescribed. *Eresus petagnae* Audouin, 1825 is considered *nomen dubium*. *Eresus pulchellus* Lucas, 1864 of Nubia and *Eresus albo-marginatus* Lucas, 1864 of Senegal are considered *nomina nuda*. *Eresus walckenaeri* Brullé, 1832 is considered a doubtful record from Egypt.

Keywords: Eresidae, *Eresus*, Egypt, Taxonomy, Spiders.

Introduction

Genus *Eresus* Walckenaer, 1805 is an old world eresid genus. Its 18 species and 7 subspecies are distributed in Europe, Mediterranean countries, North Africa, West Asia to China, and Senegal ? (Platnick, 2004).

The first record of *Eresus* from Egypt was that of Audouin (1825). He described two species under the names *E. petagnae* and *E. dufourii*. The second of them was later transferred to genus *Stegodyphus* by Simon (1885) and redescribed by Kraus & Kraus (1988). *E. petagnae* was recorded and mentioned several times by Simon (1873 & 1884) and Cambridge (1876).

After seven years, Brullé (1832) recorded *E. theisii* from Turkey, Syria, Egypt in addition to Greece. Walckenaer (1837) described his new species *E. pharaonis* depending on a single specimen from Egypt. In 1864, Lucas described *E. pulchellus* from Nubia. It may be from Egypt or Sudan ?

In 1908, Simon described *E. semicanus* from Alexandria, Mariout and Suez. He reviewed the known species of family Eresidae and described new species from Egypt.

Two years later, Simon (1910) reviewed and redescribed Egyptian eresids among North African spiders of different families.

All descriptions mentioned above lack measurements and drawings of genitalia. The most recent list of Egyptian spiders does not include more than the old records mentioned above (El-Hennawy, 2002). The absence of new material make the review of these species difficult. Therefore, it was necessary to re-examine and redescribe the type material of Egyptian *Eresus* species to partly fill this gap.

Methods

The available type material of the known species were examined. Drawings of the right palp of a male specimen and epigyna and vulvae of female specimens were prepared in addition to their photographs. Measurements of different species were taken in millimetres.

Abbreviations used: ALE = anterior lateral eye; AME = anterior median eye; L = length; MOQ = median ocular quadrangle; PLE = posterior lateral eye; PME = posterior median eye; TL = total length; W = width.

Material from the following collections were examined: MNHN = Muséum National d'Histoire Naturelle, Paris, France; UMO = Oxford University Museum of Natural History, United Kingdom (HECO = Hope Entomological Collection).

Description of Egyptian *Eresus* Species

Genus *Eresus* Walckenaer, 1805

Eresus: Greek ἐπεῖσω = to attach, to tie up, fasten (Simon, 1864: 299)

Eresus pharaonis Walckenaer, 1837 (Figs. 1A-1E. Table 1)

Eresus pharaonius Walckenaer, 1837: 396.

Erythrophora pharaonis Simon, 1864: 300.

Eresus pharaonis Simon, 1908: 83-84; 1910: 298.

Etymology: *pharaonis*: Greek Φαραώ = Pharaoh, ancient Egyptian king [of the Pharaoh, or Pharaonic]

Material examined: MNHN: *Eresus pharaonis* Walck./ Aegyptus, bottle no.471 (tube no. AR 839) 1♀ (with epigynum separated), 1♂.

Description: Female (MNHN B.471 - t. AR 839): TL 30. Cephalothorax: integument crimson red, covered by creamy white hairs mixed with light brown hairs. Cephalic area gradually inclined into thoracic area. Cephalothorax: L 13 ?. Cephalic part: L 9.52, W 9.52; square. MOQ slightly protruding forwards. Eye measurements: AME 0.20, ALE 0.24, PME 0.37, PLE 0.24, AM-AM 0.34, AL-AL 6.97, PM-PM 0.82, PL-PL 5.86, AM-AL 3.19, AM-PM 0.29. Thoracic part: L 3.48 ?, W 8.84. Chelicerae: crimson red, covered anteriorly by dense orange brown hairs. Sternum L 6.97; Labium L 2.29; Maxilla L 3.65. Sternum, Coxae: yellowish brown. Maxillae, Labium: crimson red. All covered by dense creamy white hairs. Legs and Pedipalps: orange-brown covered by dense creamy white hairs. Tarsi and metatarsi of legs I, II and tarsi and tibiae of pedipalps darker. Spination: spines only on ventral side of tarsi, metatarsi and distally on tibiae; rare on I & II, very few on III & IV. Pedipalp with a claw.

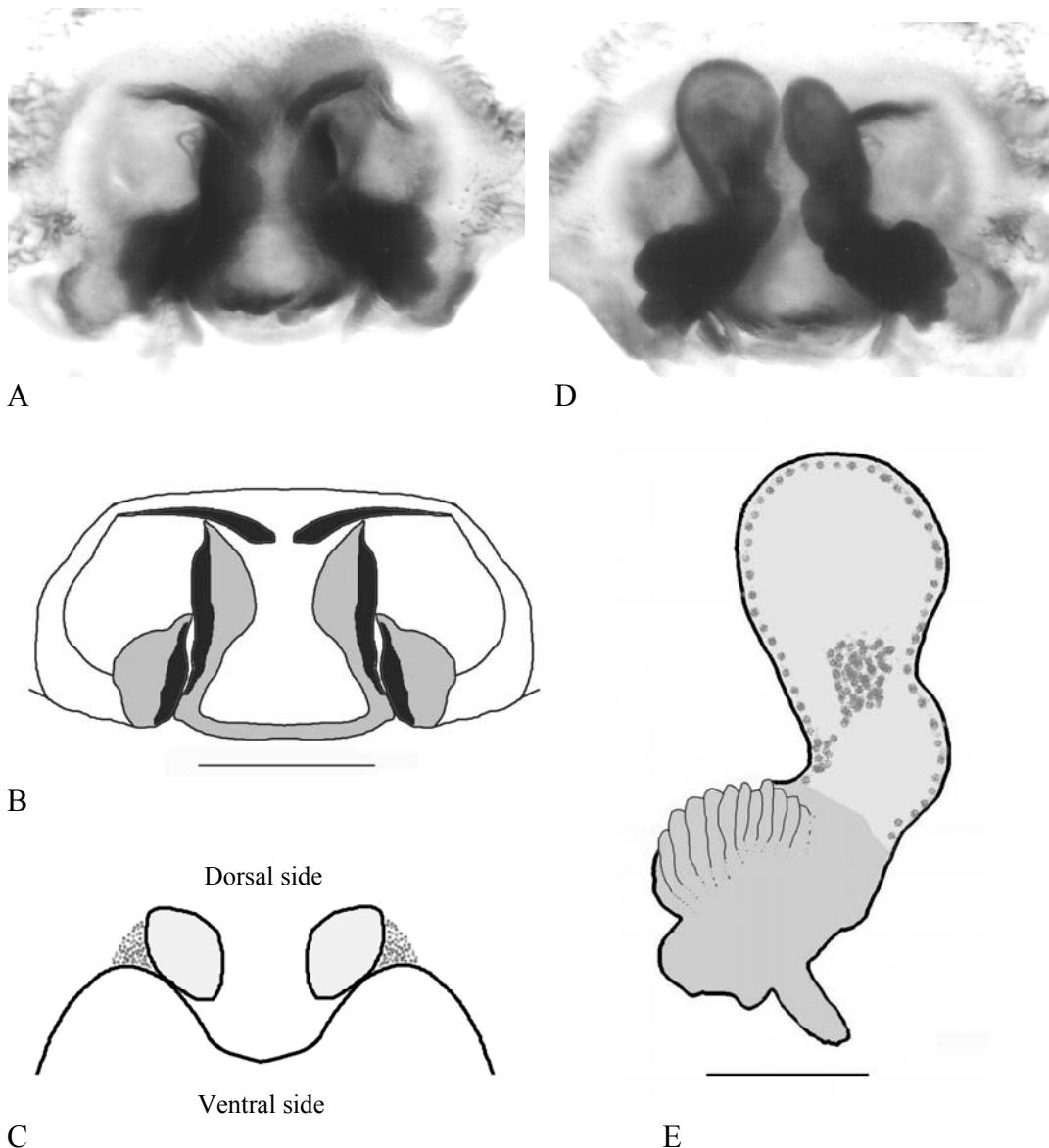


Fig. 1. *Eresus pharaonis* Walckenaer, 1837 ♀ (MNHN).

A, B. Epigynum, ventral view: A. Photograph, B. Schematic drawing.

C. Transverse section of epigynum and vulvae.

D. Vulvae photograph, dorsal view.

E. Left vulva, dorsal view. Scale = 0.5 mm (B), 0.25 mm (E).

Table 1. Leg measurements of *Eresus pharaonis* female (MNHN).

Leg	I	II	III	IV
Femur	6.80	5.85	4.76	6.80
Patella	3.67	3.40	3.26	4.08
Tibia	3.40	2.99	2.72	4.08
Metatarsus	3.67	3.40	2.72	4.08
Tarsus	2.31	1.90	1.50	1.63
Total length	19.85	17.54	14.96	20.67

Abdomen: L 19; oval, stout; yellowish white, covered by brown hairs, with 8 sigilla; abdominal pattern absent. Cribellum: bipartite.

Genitalia: (Figs. 1A-1E) Epigynum has two depressions. The anterior chitinous ridge consists of two separate parts. Vulvae are almost confined between the two depressions. Spermathecae are elongated behind the anterior ridge.

The juvenile specimen is lighter in colour. TL 9.11.

Male: unknown.

Distribution: Egypt: collected by M. Bové, without definite locality (Walckenaer, 1837). Endemic Species, only recorded from Egypt (Roewer, 1954 & Platnick, 2004).

Note on colouration. The colours of this specimen had changed during more than 160 years in alcohol. Therefore, it is necessary to refer to the first description of Walckenaer (1837), from which the following text is extracted and translated: "Cephalothorax and legs brown black. Posterior slope side of cephalothorax rounded, brown and covered by reddish hairs. Clypeus has long hairs which prolong over chelicerae. The chelicerae are hairy, reddish toward their extremities. Maxillae long, reddish, and very hairy. Sternum flat, red in the middle, provided with furry hairs on the sides. Legs brown black, short, robust, with swollen femora, garnished by furry hairs. Abdomen reddish brown, with some reddish festooned stripes on the posterior part."

***Eresus semicanus* Simon, 1908**
(Figs. 2A-4B. Tables 2-4)

Eresus petagnae Cambridge, 1876: 554 (misidentification).

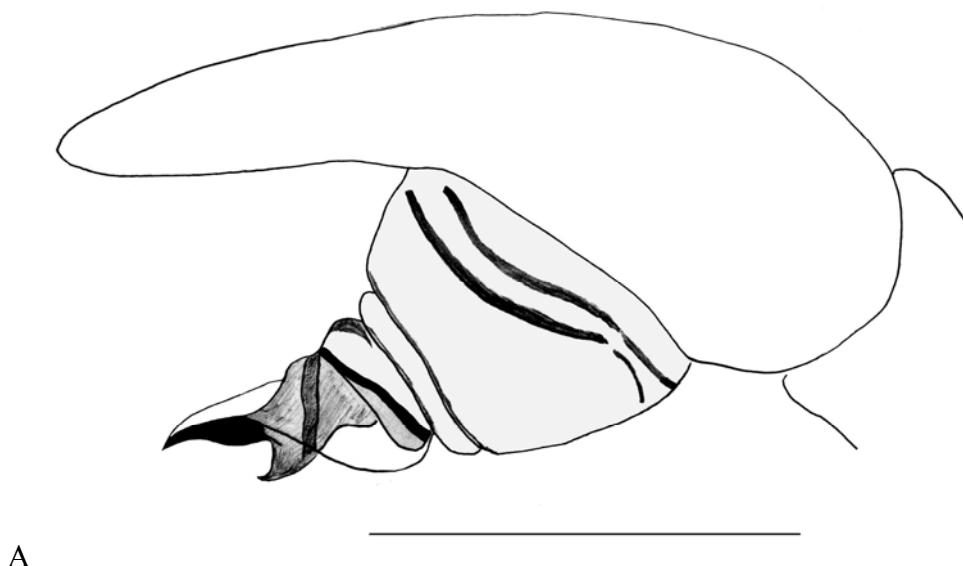
Eresus semicanus Simon, 1908: 83; 1910: 294-295, f.5.

Etymology: *semicanus*: Latin *semi-* (*semis*) = half- (one half) + *canus* = white, hoary [half hoary]

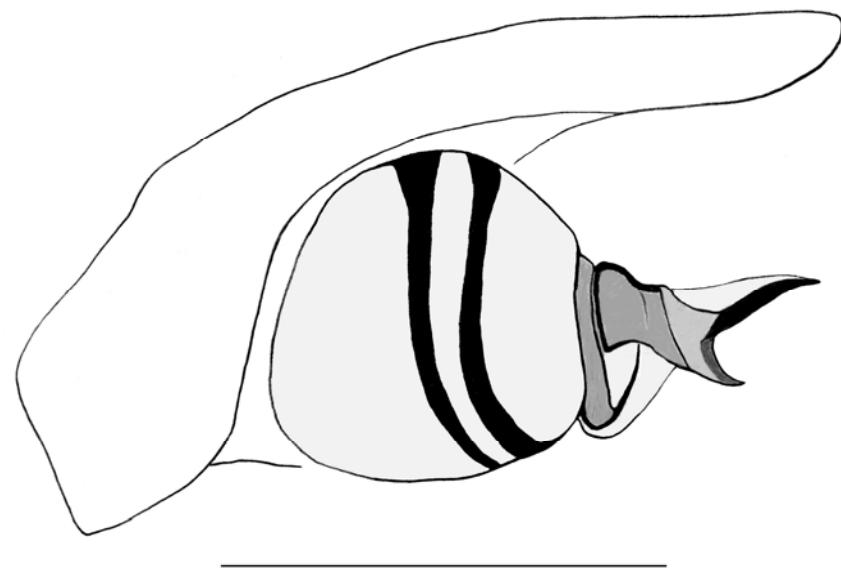
Material examined: MNHN: *Eresus semicanus* E.S./ Alexandrie, bottle no.471 (tube no. AR 836) 1♂, 3♀, 16j (with two palps and one epigynum separated). UMO: *Eresus petagnae*, B. 507 t. 9, 2♀, 3j Aleyra (Alexandria).

Description: Male (MNHN B.471 - t. AR 836): TL 9.25. Cephalothorax: integument crimson red, covered by light brown hairs. Cephalic area steeply inclined into thoracic area. Cephalothorax: L 4.76 ?. Cephalic part: L 3.57, W 4.16; rectangular. Eye measurements: AME 0.15, ALE 0.14, PME 0.27, PLE 0.17, AM-AM 0.17, AL-AL 3.29, PM-PM 0.41, PL-PL 2.81, AM-AL 1.43, AM-PM 0.08. Thoracic part: W 3.65. Chelicerae: crimson red, covered by long dense light brown hairs. Sternum L 2.81; Labium L 1.27; Maxilla L 1.85. Maxillae, Labium: crimson red; Sternum, Coxae: orange brown; all covered by light brown hairs. Sternum and first coxae darker. Pedipalps: orange-brown covered by light brown hairs with whitish hairs at joints; patella and tibia without apophyses; cymbium without processes. Palpal organ (Figs. 2A-2B): tip of conductor bifid (divided). Legs: colouration like pedipalps. Spination: spines only on ventral side of tarsi, metatarsi and distally on tibiae; few on I, II & III, numerous on IV. Leg I: metatarsus 0-0-2. Leg II: tarsus 0-2-4; metatarsus 0-1,1-4; tibia 0-0-2. Leg III: tarsus 0-2-4; metatarsus 0-2-4; tibia 0-0-2. Leg IV: tarsus 0-1,1-4; metatarsus 2-2-2-2-4; tibia 0-0-2.

Abdomen: L 5.17; covered by light brown hairs, with 2 wide longitudinal bands of whitish hairs dorsally.



A



B

Fig. 2. *Eresus semicanus* Simon, 1908 ♂ (MNHN).
Male palp: A. Prolateral view. B. Retrolateral view. Scale = 0.5 mm.

Table 2. Leg measurements of *Eresus semicanus* male (MNHN).

Leg	I	II	III	IV
Femur	3.55	3.02	2.65	3.55
Patella	1.80	1.75	1.27	1.85
Tibia	2.23	1.75	1.54	2.44
Metatarsus	2.23	1.96	1.59	2.17
Tarsus	1.38	1.17	0.85	1.09
Total length	11.19	9.65	7.90	11.10

Female (MNHN B.471 - t. AR 836): TL 13.19. Cephalothorax: integument crimson red, covered by white hairs mixed with light brown hairs. Cephalic area gradually inclined into thoracic area. Cephalothorax: L 5.03 ?. Cephalic part: L 4.25, W 4.42; almost

square. Eye measurements: AME 0.14, ALE 0.17, PME 0.31, PLE 0.20, AM-AM 0.17, AL-AL 3.44, PM-PM 0.46, PL-PL 3.07, AM-AL 1.48, AM-PM 0.10. Thoracic part: W 4.25. Chelicerae: crimson red, covered by dense white hairs mixed with light brown hairs. Sternum L 3.34; Labium L 1.43; Maxilla L 2.12. Maxillae, Labium: crimson red; Sternum, Coxae: orange brown; all covered by creamy white – light brown hairs. Pedipalps: orange-brown covered by light brown hairs with whitish hairs at joints of legs; tarsi and tibiae darker; tarsus with claw. Legs: colouration like pedipalps; tarsi, metatarsi (specially of legs I, II) darker. Spination: spines only on ventral side of tarsi, metatarsi and distally on tibiae; few on legs I & II, numerous on III & IV.

Table 3. Leg measurements of *Eresus semicanus* female (MNHN).

Leg	I	II	III	IV
Femur	2.91	2.38	2.38	3.44
Patella	1.85	1.75	1.48	2.12
Tibia	1.85	1.59	1.38	2.33
Metatarsus	1.75	1.59	1.32	1.96
Tarsus	1.17	0.95	0.66	1.01
Total length	9.53	8.26	7.22	10.86

Abdomen: L 9.38; creamy white, covered by light brown hairs, with 8 bare sigilla. Cribellum bipartite.

Genitalia (Figs. 3A-4B): Epigynum has a trapezoidal chitinous plate. There is a wide depression between an anterior semi-circular chitinous ridge and the chitinous plate. Vulvae resemble those of *Stegodyphus* (Kraus & Kraus, 1988). The MNHN specimen has vulvae tapering forwards more than in UMO specimen. Spermathecae as depicted in Figs. 3C, 4B.

Measurements of the other two females and a distinguished juvenile (MNHN):

	TL	Abdomen L	Cephalothorax L	Cephalic part L	, W
♀1	12.65	9.66	4.35	3.54	3.81
♀2	10.88	6.80	4.35	3.54	3.81
j	14.28	10.06	5.03	4.62	4.76

Female (UMO B. 507 - t. 9): Different Measurements: TL 17.93 [the smaller female TL 14.61]. Cephalothorax: L 8.30. Cephalic part: L 5.81, W 5.81; square. Eye measurements: AME 0.20, ALE 0.22, PME 0.40, PLE 0.22, AM-AM 0.32, AL-AL 4.40, PM-PM 0.60, PL-PL 4.24, AM-AL 2.00, AM-PM 0.08. Thoracic part: L 2.49, W 5.56. Sternum L 4.20; Labium L 2.40; Maxilla L 2.40. Abdomen: L 13.78.

Table 4. Leg measurements of *Eresus semicanus* female (UMO).

Leg	I	II	III	IV
Femur	4.00	3.48	3.60	4.80
Patella	2.20	2.20	2.20	2.80
Tibia	2.40	2.08	1.80	3.00
Metatarsus	2.08	2.00	1.60	2.60
Tarsus	1.20	1.20	0.92	1.08
Total length	11.88	10.96	10.12	14.28

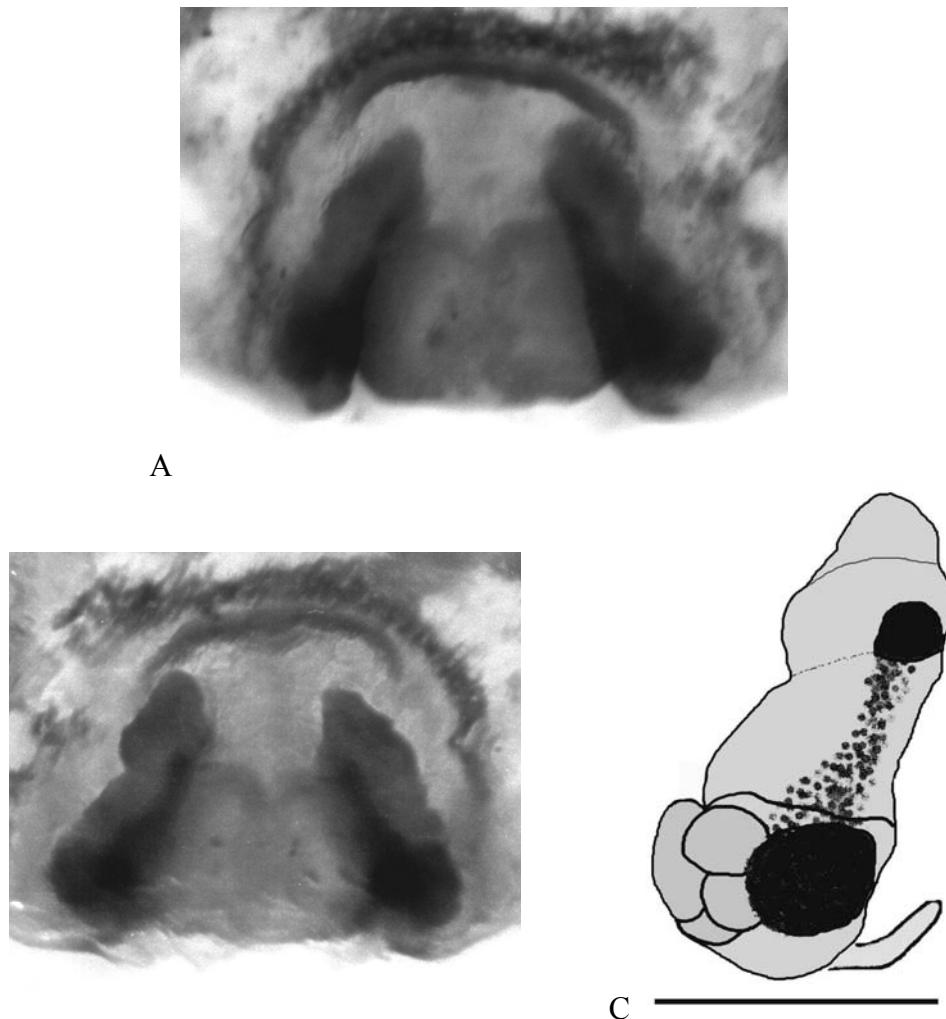


Fig. 3. *Eresus semicanus* Simon, 1908 ♀ (MNHN).

A. Epigynum photograph, ventral view. B. Vulvae photograph, dorsal view.

C. Left vulva, dorsal view. Scale = 0.25 mm.

Distribution: Egypt: Alexandria (about 31°11'08"N 29°53'30"E), Mariout, Suez (Simon, 1908 & 1910). This species is only recorded from Algeria and Tunisia by Roewer (1954: 1295) and Platnick (2004). The following note corrects this distribution.

Note. The female specimen of *E. semicanus* (MNHN) from Birine, Algeria, bottle no.471 (tube no. AR 842) and the female and juvenile specimens of *E. petagnae* (MNHN) from Djerba, Tunisia, bottle no.471 (tube no. AR 835) do not belong to this species. They belong to another species which may be undescribed yet.

Note on colouration. The colours of this species' specimens had changed during more than 90 years in alcohol. Therefore, it is necessary to refer to the description of Simon (1908 & 1910), from which the following translation is adopted:

Male: Cephalothorax black, covered by blackish grey hairs, mixed on the rear of cephalic part with very short red hairs and on the thoracic part with long white scattered hairs (thoracic part sometimes with marginal red hairs). Abdomen black, pubescent, covered by black hairs, decorated above by two large bands or by two sets of spots formed of mixed white and red hairs, and below by white hairs. Chelicerae black with sparse white hairs. Legs black, covered by black hairs; femora, patellae, tibiae and

metatarsi apically with wide white rings. Pedipalp small, black; femur and patella apically with white rings, the process of bulb unequally bifid. Posterior median eyes nearly six times larger than the anteriors.

Female: Black. Cephalothorax covered by black hairs and sprinkled with very small white points formed of very short thick hairs, depressed and acute. Clypeus and chelicerae, at least in their basal half, densely covered by white or pale yellow hairs. Abdomen with short black silky pubescence, mixed of some white hairs, sigilla with fine white borders. Legs black, decorated by white hairs at the joints.

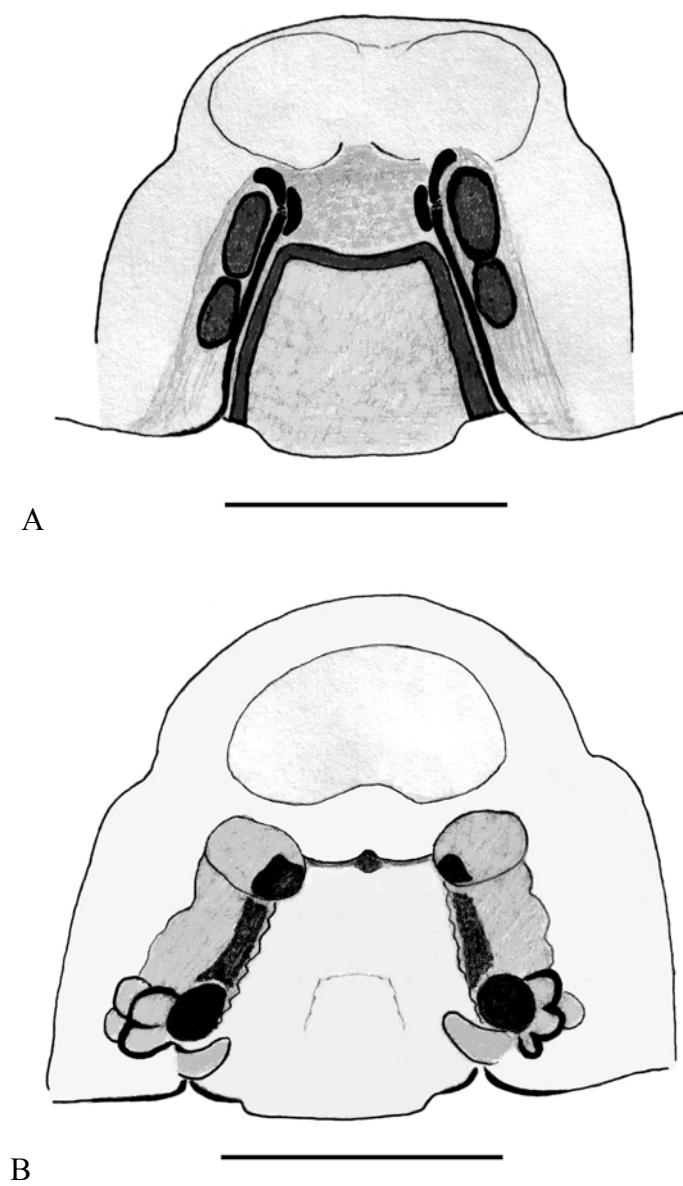


Fig. 4. *Eresus semicanus* Simon, 1908 ♀ (UMO).
A. Epigynum, ventral view. B. Vulva, dorsal view. Scale = 0.5 mm.

Species Inquirendae

Eresus petagnae Audouin, 1825

Eresus petagnae Audouin, 1825: 151, pl.4, f.11; 1827: 375-376, pl.4, f.11. Simon, 1873: 357. Cambridge, 1876: 554. Simon, 1884: 326.

This species is recorded from Egypt and Syria (Palestine ?) by Roewer (1954: 1295) and Platnick (2004) depending on some of the following references:

1. Audouin (1825 & 1827) stated in his brief diagnosis that “this species is analogous to *Eresus frontalis* Walckenaer because of the arrangement and size of eyes, but it essentially differs by lesser number of deep points on dorsal side of the abdomen; they are only six. The other differences may be in colours.” His drawn specimen seems juvenile as Simon (1910: 294) stated. It may be *E. semicanus*, *E. pharaonis*, or perhaps *Doriceus quadrispilotus* Simon, 1908 (Simon, 1910).

2. Walckenaer (1837: 397) considered *E. petagnae* and *E. theis* synonyms to *E. imperialis*. (= *E. cinnaberinus frontalis* Latreille, 1819 in Platnick, 2004).

3. Simon (1873) said that “This species seems to be fairly common in Egypt and Syria. M. Ch. de la Brûlerie brought to me a fairly great number of specimens, but no one exactly adult.”

4. Cambridge (1876) found adult and immature females of this species under stones near Alexandria. “But for M. Simon's opinion (... 1873, p. 357), I should have considered this species to have been identical with *Eresus imperialis* Duf. (= *E. frontalis*, Latr.)” (= *E. cinnaberinus frontalis* Latreille, 1819 in Platnick, 2004).

[The specimens of Cambridge are deposited in UMO. They are 2 females and 3 juveniles. They belong to *E. semicanus* Simon, 1908.]

5. Simon (1884) mentioned that *E. petagnae* is widely distributed in Egypt and Syria.

6. Simon (1908: 83) stated that the Egyptian species *Eresus semicanus* Simon, 1908 is also found in Tunisia at the isle of Djerba and that it is the species which he wrongly spoke about under the name of *Eresus petagnae* in 1884, p.326 (line 12) ?.

[These specimens of Djerba (MNHN) do not belong to *E. semicanus* but to an undescribed species.]

The first description is brief and based as most of the other following descriptions on juvenile specimens. The adult material of Cambridge (1876) and Simon (1884) belong to other species. *Eresus petagnae* has to be considered *nomen dubium*.

Eresus pulchellus Lucas, 1864

Eresus pulchellus Lucas, 1864: 29. Simon, 1908: 81; 1910: 289. Roewer, 1954: 1296. Platnick, 2004.

Lucas (1864) proposed three names of new *Eresus* species: *E. siculus* from Sicily (= *Eresus walckenaeri* Brullé, 1832), *E. pulchellus* from Nubia, and *E. albomarginatus* from Senegal. The three names were accompanied by very short diagnoses with a note that their descriptions will be published later. He based his diagnosis of *E. pulchellus* on a female specimen collected by M. P.-E. Botta from Nubia, as follows: “Very small, distinguished from known species by the yellowish longitudinal stripe which goes over its abdomen dorsally along its length. Length 10 mm.”

Simon (1908: 81 & 1910: 289) said that *E. pulchellus* is probably the male of *Stegodyphus niloticus*. (= *S. dufouri* (Audouin, 1825)). This species is mentioned by Roewer (1954: 1296) from Nubia and by Platnick (2004) from Egypt. The absence of description and the unavailability of specimens of this species make it impossible to state the true identity of this species. It has to be considered *nomen nudum*. Also, *E. albo-marginatus* Lucas, 1864 of Senegal has the same situation.

Doubtful Record

Eresus walckenaeri Brullé, 1832

This species is recorded by Roewer (1954: 1296) from East Mediterranean countries and Turkestan and by Platnick (2004) as a Mediterranean species. Pavesi (1878: 389) mentioned that the distribution of *Eresus theisii* Brullé is Turkey, Syria, Egypt in addition to Greece. He stated that all the eresid species mentioned in his work, including *E. Petagnae* and *E. Theisii* are very similar, if not identical.

[*E. theis* Brullé, 1832 = *E. walckenaeri* Brullé, 1832 (Platnick, 2004)]

There is no definite locality of this species from Egypt in literature and no available specimens of it from Egypt in the consulted collections. It is here considered a doubtful record from Egypt.

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References

Audouin, V. 1825. Explication sommaire des planches d'Arachnides de l'Égypte et de la Syrie, Publiées par Jules-César Savigny. In: *Description de l'Égypte ou Recueil des observations et des recherches qui ont été faites en Égypte pendant l'expédition de l'armée française. Histoire Naturelle*. Tome Premier 1809. Paris. 4e partie, pp. 99-186. Atlas: pls. 1-9 (Arachnides).

Audouin, V. 1827. Idem. *Ibid.* 2nd edition. vol.22, pp. 291-430.

Brullé, A. 1832. *Expédition scientifique de Morée*. Paris, tome III, 1re partie: Zoologie, 2me section: Des Animaux articulé (Araneae, pp. 51-57, pl. 28).

Cambridge, O.P. 1876. Catalogue of a collection of spiders made in Egypt, with descriptions of new species and characters of a new genus. *Proc. Zool. Soc. Lond.*, 1876, pp.541-630, pl.58-60.

El-Hennawy, H.K. 2002. A list of Egyptian spiders (revised in 2002). *Serket*, 8(2): 73-83.

Kraus, O. & Kraus, M. 1988. The genus *Stegodyphus* (Arachnida, Araneae). Sibling species, species groups, and parallel origin of social living. *Verh. naturwiss. Ver. Hamburg*, 30: 151-254.

Lucas, H. 1864. Note relative à plusieurs espèces d'*Eresus* inédites.* *Ann. Soc. ent. Fr.* (4) 4(Bull.): 28-29.

Pavesi, P. 1878. Aracnidi aggiunto un catalogo sistematico delle specie di Grecia. *Ann. Mus. Civ. St. Nat. Genova*, 11: 335-396.

Platnick, N.I. 2004. *The world spider catalog, version 4.5*. American Museum of Natural History, online at <http://research.amnh.org/entomology/spiders/catalog/index.html> [Family Eresidae, last updated December 25, 2002]

Roewer, C.F. 1942. *Katalog der Araneae von 1758 bis 1940*. 1.Band 1040pp. Bremen.

Roewer, C.F. 1954. *Katalog der Araneae von 1758 bis 1940, bzw. 1954*. 2.Band Abt.b pp.925-1751. Bruxelles.

Simon, E. 1864. *Histoire Naturelle des Araignées*. Edit I. Paris, 540 pp., 207 figs.

Simon, E. 1873. Études arachnologiques. 2e Mémoire. III. Note sur les espèces européennes de la famille des Eresidae. *Annales de la Société Entomologique de France* (5) 3: 335-358, pl. 10, figs. 8-13.

Simon, E. 1884. Études Arachnologiques, 16e Mémoire, XXIII Matériaux pour servir à la faune des Arachnides de la Grèce. *Ann. Soc. ent. Fr.*, 6 (4): 305-356.

Simon, E. 1885. Étude sur les Arachnides recueillis en Tunisie en 1883 et 1884 par MM. A. Letourneux, M. Sédillot et Valery Mayet, membres de la mission de l'Exploration scientifique de la Tunisie. In *Exploration scientifique de la Tunisie*. Paris, pp. 1-55.

Simon, E. 1908. Étude sur les espèces de la famille des Eresidae qui habitent l'Égypte. *Bull. Soc. Ent. Egypte*, 1: 77-84.

Simon, E. 1910. Catalogue raisonné des Arachnides du Nord de l'Afrique (1re partie). *Ann. Soc. ent. Fr.*, 79: 265-332. figs. 1-13.

Walckenaer, C.A. de 1837. *Histoire Naturelle des Insectes Aptéres*. (Paris) 1: 1-682 pl. 1-15.

* This is the oldest title of this note which had no original title. It was mentioned in this form in p. 260 of: Tables générales des Annales de la Société Entomologique de France 1861-1880 Paris [1885]. Rédigées par M. Ed. Lefèvre.

It was also mentioned in Roewer's "Katalog der Araneae" (1942, p.17) as: [Note sur trois *Eresus*. *Ann. Soc. ent. Fr.* (4) 4(Bull.): 28-29.] and by Platnick (2004) as: [Sur trois nouvelles espèces d'*Eresus*.].